MLJ *MOFFET, LARSON & JOHNSON, INC.*
CONSULTING TELECOMMUNICATIONS ENGINEERS

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ENGINEERING REPORT

ENGINEERING STATEMENT

SUPPLEMENTAL INFORMATION IN SUPPORT OF THE

PETITION FOR PARTIAL RECONSIDERATION OF

SHENANDOAH VALLEY EDUCATIONAL TELEVISION CORPORATION

OF THE SIXTH REPORT AND ORDER IN MM DOCKET NO. 87-268

December 19, 1997

Shenandoah Valley Educational Television Corporation.
Harrisonburg, Virginia

Engineering Statement
Supplemental Information in Support of the
Petition for Partial Reconsideration of
Shenandoah Valley Educational Television Corporation
of the Sixth Report and Order in MM Docket No. 87-268

The firm of Moffet, Larson and Johnson, Inc. (MLJ) has been retained by Shenandoah Valley Educational Television Corporation (SVETC), licensee of television station WVPT, NTSC channel 51, Staunton, Virginia to provide additional engineering information in support for its Petition for Partial Reconsideration of the Sixth Report and Order in MM Docket No. 87-268 (Sixth Report). By the Sixth Report WVPT was allotted channel 19 for DTV operation. This channel is considered unacceptable for a number of reasons as discussed in the SVETC petition including interference to existing service of WVPT's channel 19 translator and the opportunity to improve WVPT service. Television channel 11 can be allotted to Staunton in compliance with the new distance separation rules. Thus, SVETC requested the assignment of television channel 11 for its digital operation. The Commission has requested additional studies with regard to impact of operation on channel 11 on existing VHF translators and low power TV (LPTV) stations on co-channel and adjacent channels. In this report the term "LPTV" is used to refer to translators as well as LPTV stations.

The following LPTV stations are authorized to operate on channels 10, 11 or 12 within 250 kilometers of the WVPT transmitting site:

Call	Location	Channel	Distance (km)	Bearing (° True)
WAZT-LP	Woodstock, VA	10	99.8	41.0
W10CE	Charlottesville, VA	10	70.9	101.1
W11AL	Flintstone, MD	11	182.2	21.5
W11AZ	Bergton -Criders, VA	11	67.7	23.0

There are no channel 12 LPTV stations within 250 kilometers of the WVPT site on Elliot Knob. The impact study may be conducted using methods and interference ratios of sections 74.705 through 74.707 of the translator and LPTV rules for interference to the proposed DTV operation. The interference ratios of Section 76.623 of the TV rules were used to show interfering contours from the proposed DTV operation to the translators. Normally in a case such as this only interference to TV stations is of concern; LPTV stations are only protected from interference from new LPTV stations and not from interference from TV stations. In this

case interference to the protected contour (68 dBu) of the translators will also be considered because such interference is part of the justification for assignment of channel 11 to SVETC. For interference from DTV channel 11 to the LPTV stations, a desired to undesired cochannel ratio of 34 dB and adjacent channel ratio of -12 dB are used. For interference to the WVPT DTV operation, coverage is shown by the 36 dBu contour. The location of the F(50,50) contour is shown although the TV rules are based on the F(50,90) contours. It is not clear from the new LPTV rules which is appropriate; use of the F(50,90) would show less impact on DTV operation. In this case, the co-channel desired to undesired ratio is 2 dB and the adjacent channel ratio - 48 dB. Recently concern has been raised over the accuracy of the adjacent channel ratios for interference to DTV reception. The appropriate ratios may be 20 dB poorer than the ratios of the rules. Thus a ratio of - 28 dB may be more accurate than the -48 dB of the rules and is used in this study; the -28 dB ratio results in a larger contour than the - 48 dB ratio. Predicted coverage contours, F(50,50), and interfering contours F(50,10) are shown on the maps included in this report based upon the forgoing field strength contours and ratios.

The following figures are included in the study:

Figure 1	Cochannel Contour Study
Figure 2	Terrain profile from WVPT to W11AZ
Figure 3	Adjacent Channel Contour Study - Interference to WVPT DTV channel 11 from LPTV stations
Figure 4	Terrain Profile from WVPT to W10CE
Figure 5	Adjacent Channel Contour Study - Interference to LPTV stations from WVPT DTV channel 11

Figure 1 shows predicted coverage and cochannel interfering contours for WVPT DTV on channel 11 and stations W11AL and W11AZ. The map shows the normally protected contours of the translators, 68 dBu, F(50,50), and the interfering contours, 34 dBu, F(50,10). As shown on Figure 1, translator W11AZ is located approximately on the predicted channel 11 coverage contour, 36 dBu F(50,50) and interfering contour, 34 dBu F(50,10). There would be no overlap if the F(50,90) contour were used for the channel 11 DTV operation. Regardless, WVPT is not expected to serve this area or cause interference because of terrain shielding. Figure 2 is a terrain profile from the WVPT site to the W11AZ site. The profile shows multiple ridges obstructing the path to the W11AZ coverage area, which is approximately 70 kilometers from the WVPT site. There is no contour overlap with station W11AL at Flintstone Maryland.

Figure 3 shows the predicted WVPT 36 dBu coverage contour and the interfering contours for adjacent channel stations WAZT-LP and W10CE. Interfering contours are shown for a - 28 dB ratio, that is the predicted interfering contour is 64 dBu. There is potential interference to WVPT on channel 11 from WAZT-LP at Woodstock, Virginia. However, this area is served by

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SVETC satellite station WVPY at Front Royal. Figure 3 also shows the predicted WVPY Grade B contour. Predicted interference to WVPT is well within this contour.

Interference from W10CE at Charlottesville is not expected because WVPT service on channel 11 is not anticipated in Charlottesville. Figure 4 is a terrain profile from the WVPT site to the W10CE site. In this case the path is obstructed by the Blue Ridge; this is the reason for the SVETC channel 19 translator at Charlottesville.

Figure 5 shows predicted F(50,50) coverage contours of translator stations W10CE and WAZT-LP (68 dBu) and the predicted interfering F(50,10) contour of WVPT (80 dBu). The predicted interfering contour of WVPT on channel 11 does not overlap either of the coverage contours. In addition, terrain shielding as shown in Figure 5 will prevent interference to W10CE.

In summary, studies show that no loss of LPTV or translator service is expected if SVETC operates on channel 11 instead of on channel 19 in order to provide WVPT's DTV service based upon very conservative engineering assumptions. In addition, there would be no net loss of SVETC service caused by interference from LPTV stations. Thus, there would be no impact on the nearby co-channel and adjacent channel LPTV stations.

The undersigned certify that this statement and the attached figures were prepared by him or under his supervision and are true and correct to the best of his knowledge, information and belief.

Joseph W. Stielper
Senior Engineer

Figure 1

Cochannel Contour Study

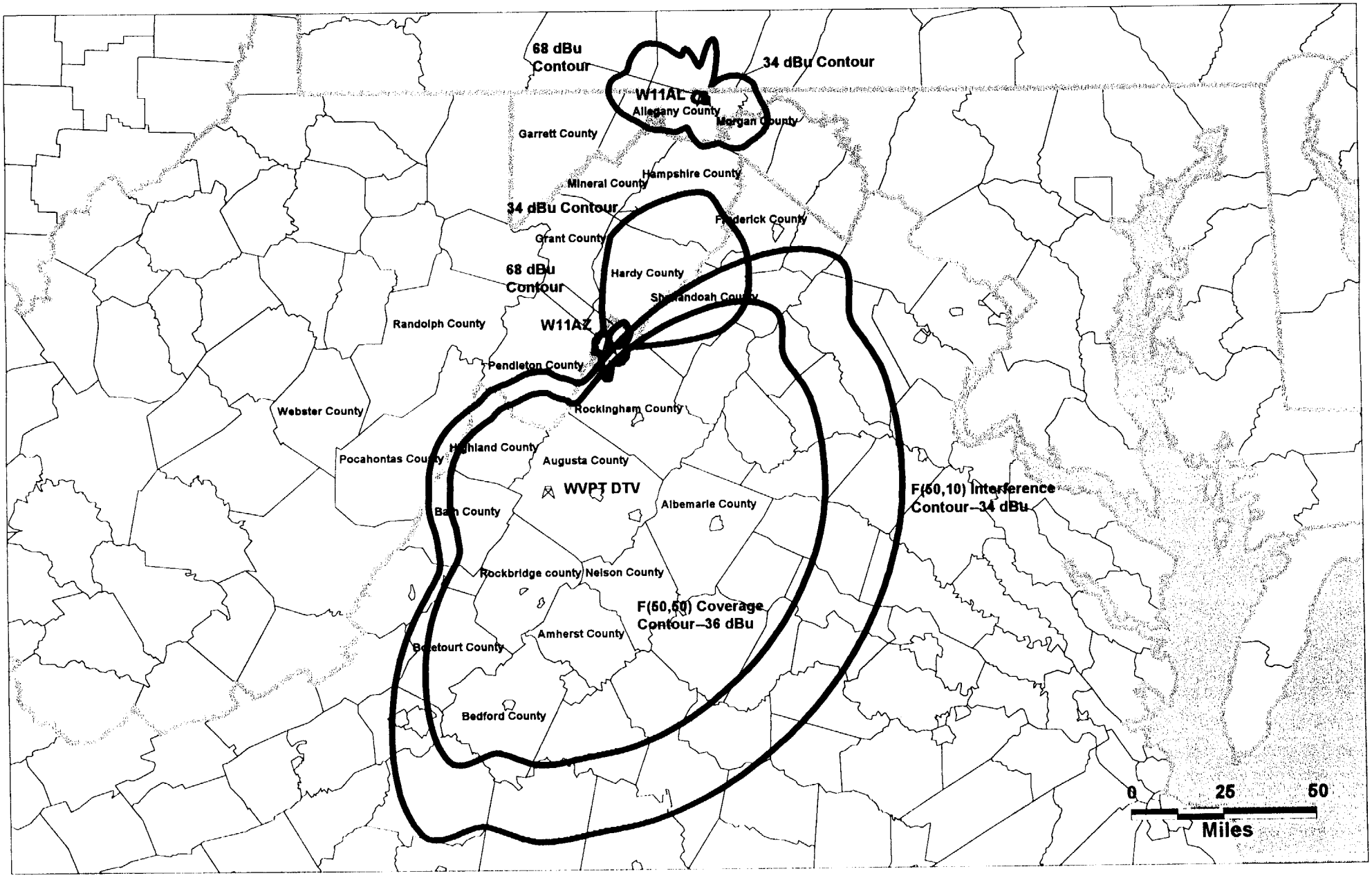

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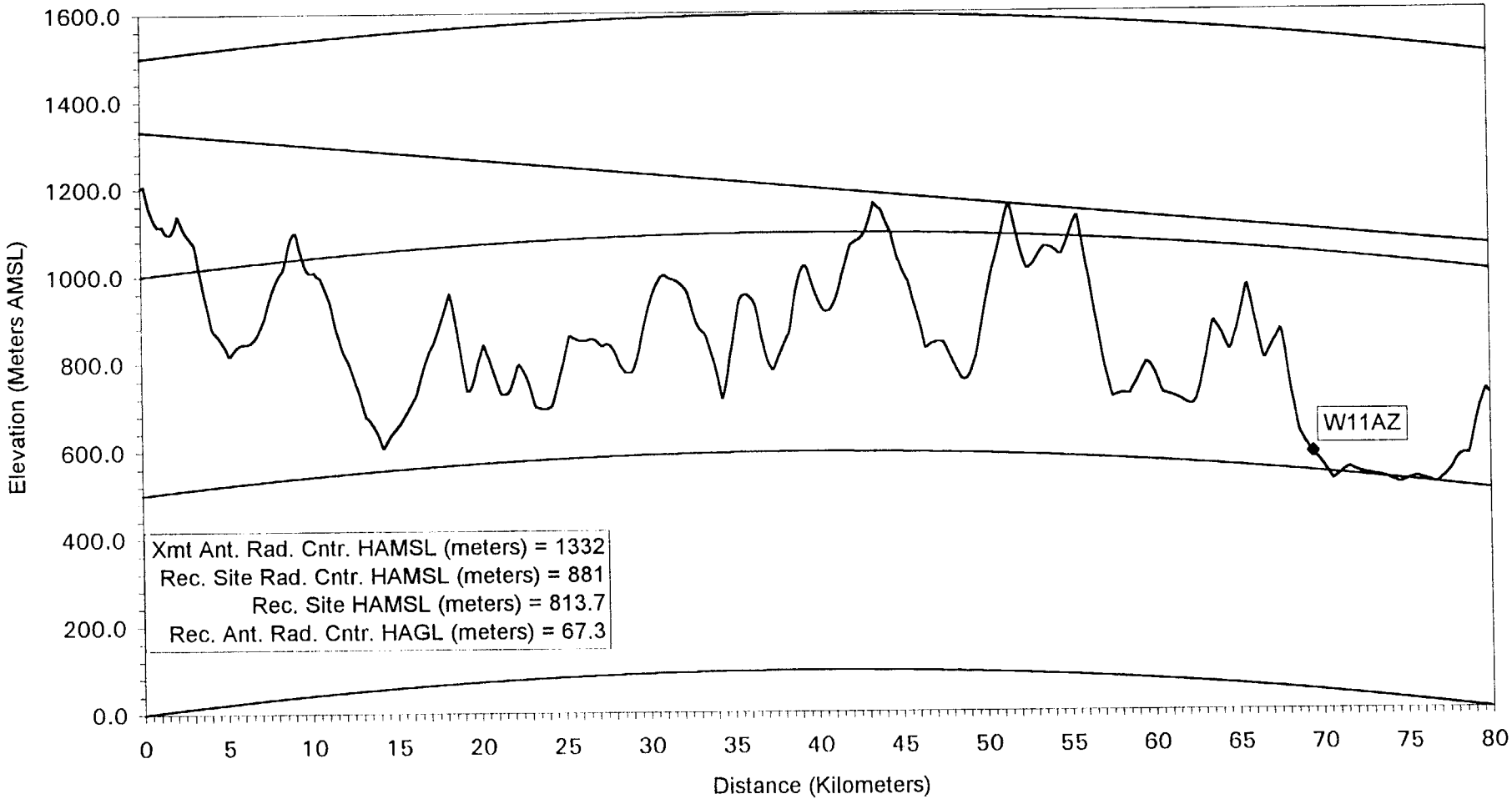
Figure 2

From: WVPT DTV Ch 11 Staunton, VA
39° 09' 54" N.L. 79° 18' 51" W.L.
To: W11AZ Bergton-Criders, VA
38° 43' 32" N.L. 79° 00' 32" W.L.
Distance: 67.7 Kilometers Bearing: 23.0°

4/3 Earth Radius

Terrain data from USGS 3" database



Adjacent Channel Contour Study
Interference to WVPT DTV Ch 11 from LPTV Stations

Figure 3

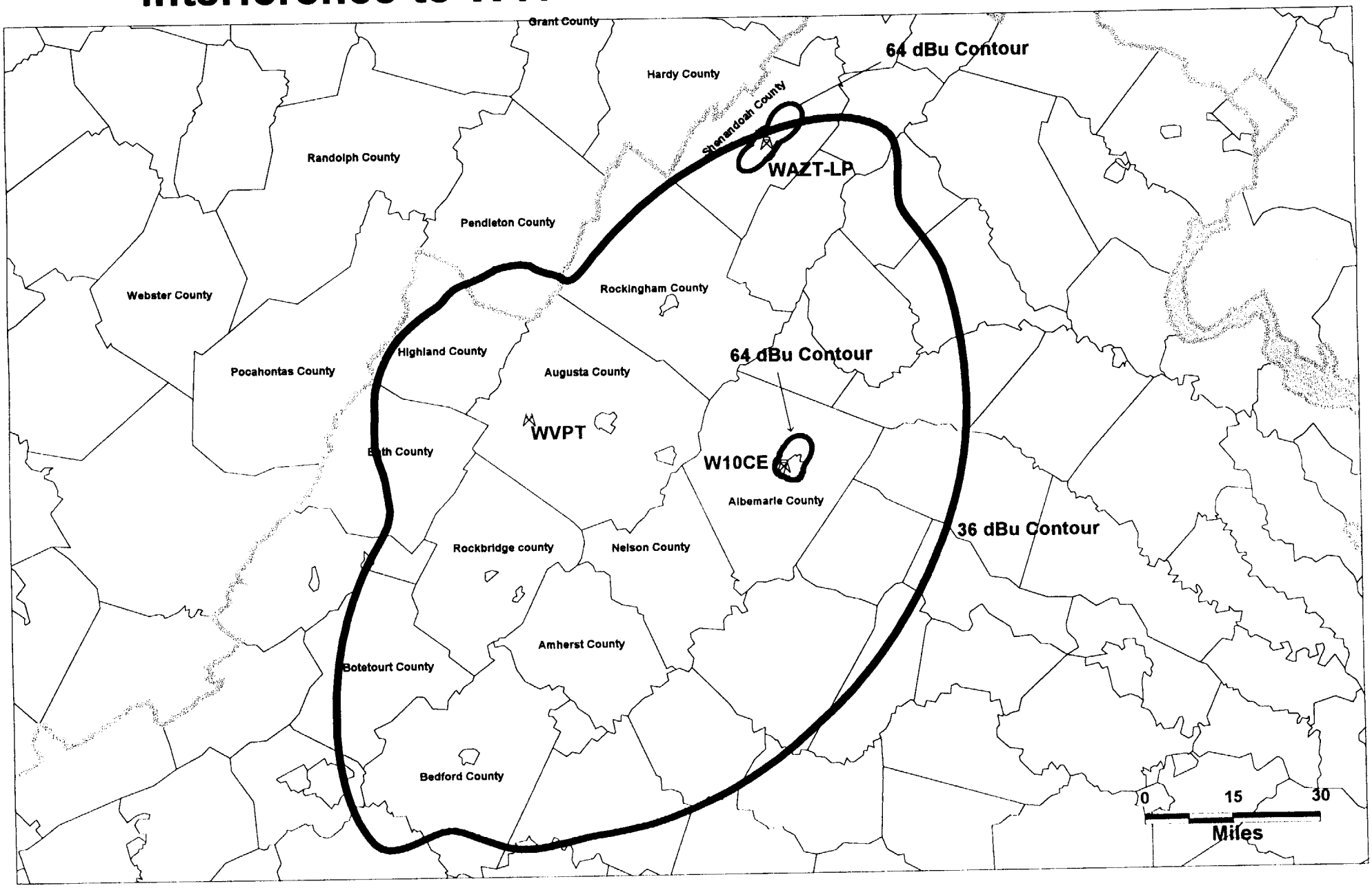


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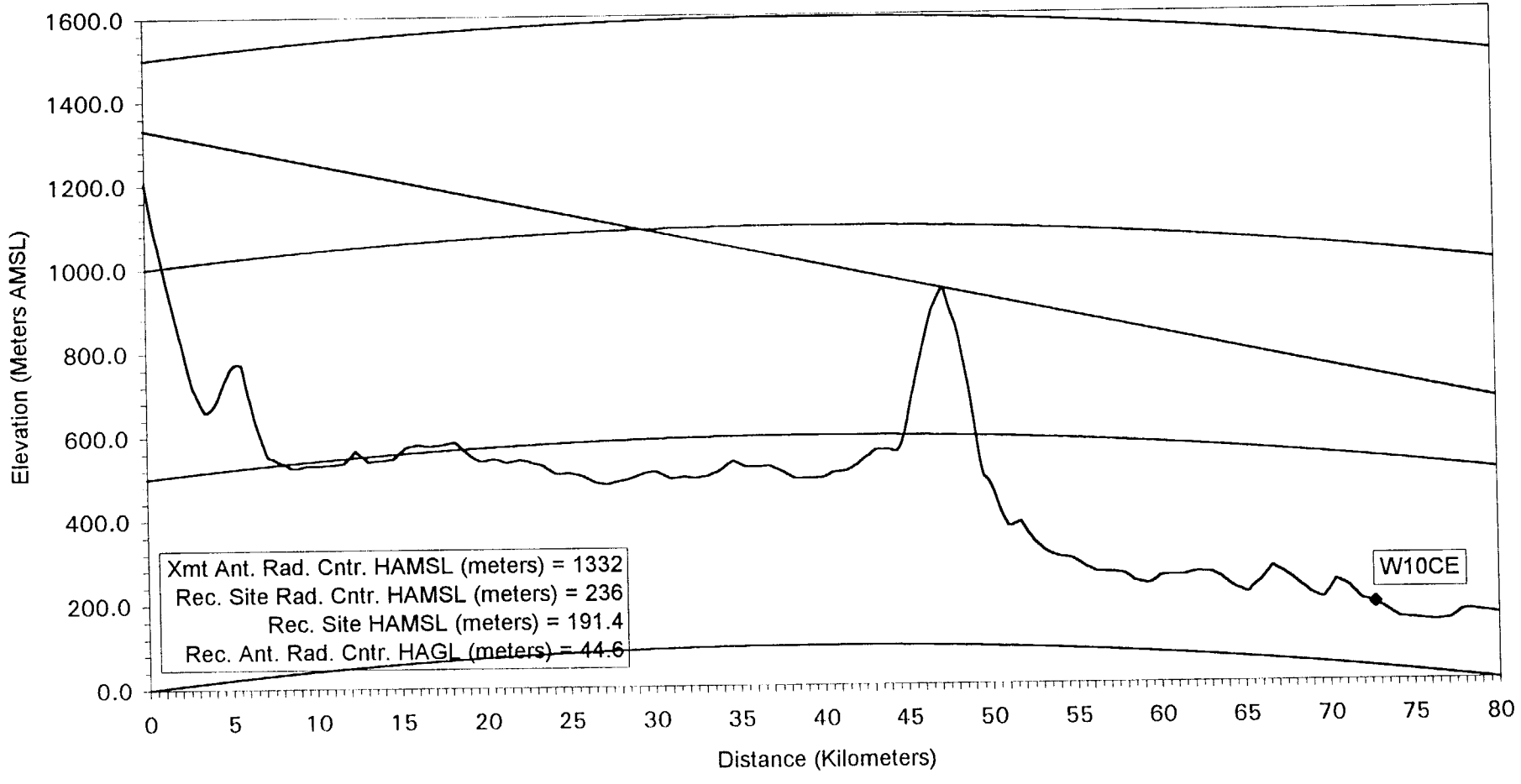
Figure 4

From: WVPT DTV Ch 11 Staunton, VA
39° 09' 54" N.L. 79° 18' 51" W.L.
To: W10CE Charlottesville, VA
38° 02' 25" N.L. 78° 31' 17" W.L.
Distance: 70.9 Kilometers Bearing: 101.1°

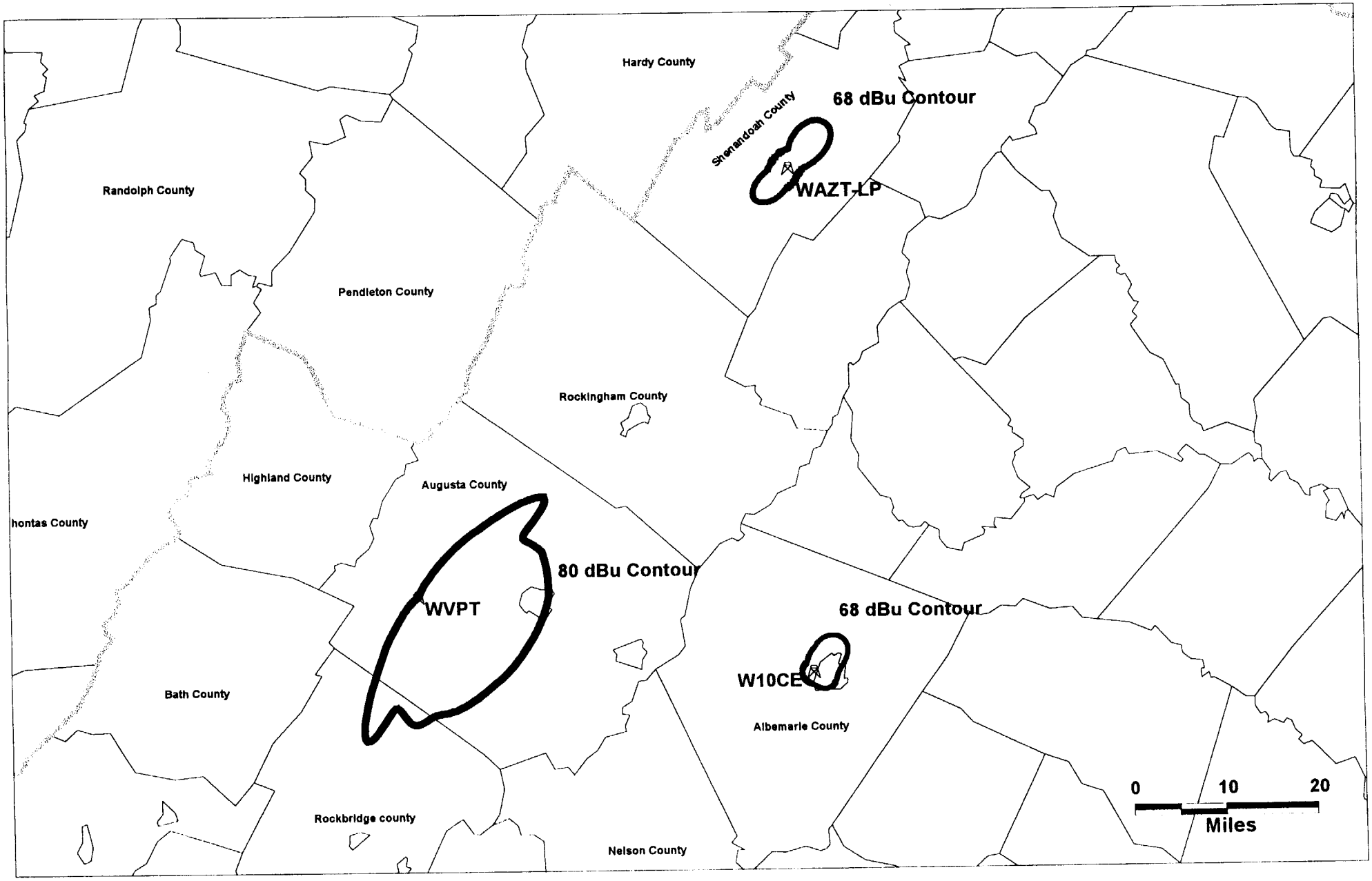
Terrain data from USGS 3" database

4/3 Earth Radius



Adjacent Channel Contour Study
Interference to LPTV stations from WVPT DTV Ch 11

Figure 5



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